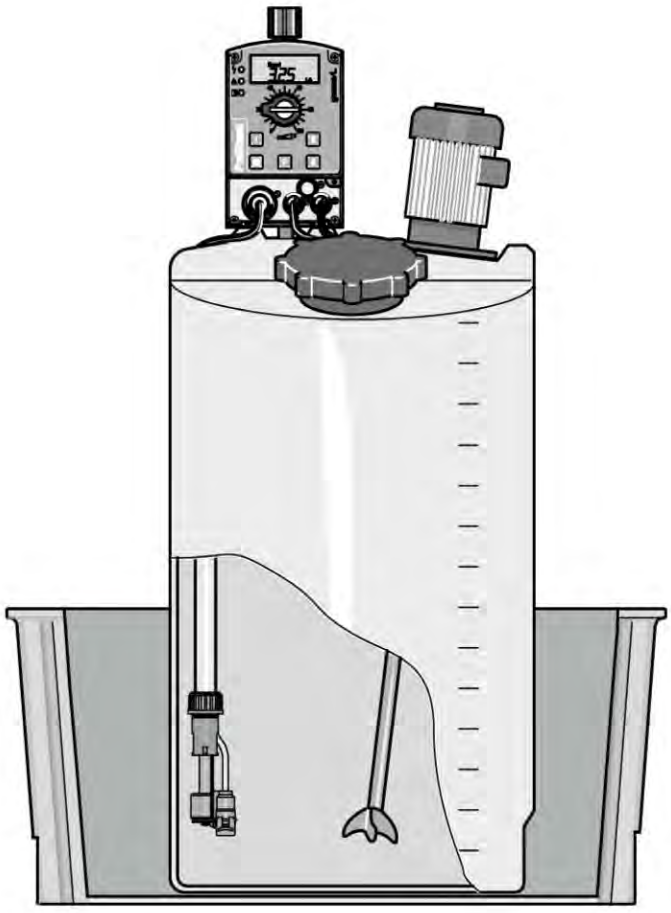
Operating instructions

Metering station
DSBa



P_DD_0008_SW

Please carefully read these operating instructions before use! · Do not discard!
The operator shall be liable for any damage caused by installation or operating errors!
Technical changes reserved.

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Supplementary information

Fig. 1: Please read!

Read the following supplementary information in its entirety! Should you already know this information, you have an even greater need of the Operating Instructions.

The following are highlighted separately in the document:

- Enumerated lists

→ Instructions

⇨ Outcome of the instructions

- see (reference)

Information

This provides important information relating to the correct operation of the device or is intended to make your work easier.

Safety information

Safety information is identified by pictograms - see "Safety Chapter".

General non-discriminatory approach

In order to make it easier to read, this document uses the male form in grammatical structures but with an implied neutral sense. It is aimed equally at both men and women. We kindly ask female readers for their understanding in this simplification of the text.

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1 Identify code overview

Please enter the identity code given on the nameplate under "Type" into the bottom box below.

DS Ba	Metering stations with PE tank						
	PE tank						
	xxxxN	xxxx l Metering tank PE, neutral colour (xxxx = 0035, 0060, 0100, 0140, 0250, 0500, 1000)					
	xxxxS	xxxx l Metering tank PE, black					
	xxxxB	xxxx l Metering tank PE, blue					
	xxxxG	xxxx l Metering tank PE, blue					
	xxxxR	xxxx l Metering tank PE, red					
		Collecting pan					
		0	without collecting pan				
		1	with collecting pan, version with neutral colour				
		2	with collecting pan, coloured version (same colour as tank)				
			Version				
			0	With ProMinent® Logo			
			1	Without ProMinent® Logo			
				lock for tank screw top			
				0	no lock (for 35 l tank only)		
				1	with lock		
					Hand mixer, stirrer		
					0	none	
					A	with PP hand mixer	
					B, D, E, F, G, C	with PP manual stirrer	
					H	with stainless steel electric stirrer 0.02 kW	
					I, K, L	with stainless steel electric stirrer 0.18 kW	
					M	with stainless steel electric stirrer 0.25 kW	
					N	with stainless steel electric stirrer 0.75 kW	
					P	with PVDF electric stirrer 0.02 kW	
					R, S, T	with PVDF electric stirrer 0.18 kW	
					U	with PVDF electric stirrer 0.25 kW	
					W	with PVDF electric stirrer 0.75 kW	
						Metering pump mounting	
						0	without pump
						A	for Beta®, gamma/ L
						B	for Sigma/ 2/ 3

DS Ba	Metering stations with PE tank											
						C	for Sigma/ 1					
						D	for alpha					
						E	for Beta®, gamma/ L					
						F, L, H	for Sigma/ 1					
						J	for Sigma/ 2/ 3					
						N	for alpha					
						P	for delta					
							Suction assembly selection					
							0	without suction assembly				
							1	Suction assembly with 6 x 4 mm suction hose				
							2	Suction assembly with 8 x 5 mm suction hose				
							3	Suction assembly with 12 x 9 mm suction hose				
							4	DN 10 suction assembly				
							5	DN 15 suction assembly				
							6	DN 20 suction assembly				
							7	DN 25 suction assembly				
							8	DN 32 suction assembly				
								Suction assembly material				
								0	none			
								1	PVC			
								2	PP			
									Suction assembly level switch			
									0	without level switch		
									1	2-stage, round plug, (6x4, 8x5, 12x9) for Beta®, gamma/ L		
									2	2-stage, round plug, (DN 10 - 32) for Sigma/ 1/ 2/ 3		
										Accessories - drain tap for storage tank		
										0	No accessories	
										1	with PVC ball valve, d16 hose nozzle	
										2	with PP ball valve, d20 hose nozzle	
											Metering equipment	
											0	without metering equipment
											1	with metering equipment d6 35/60 l
											2	with metering equipment d8 60 l
											3	with metering equipment d8 100/140 l

DS Ba	Metering stations with PE tank											
											4	with metering equipment d12 250 l
											5	with metering equipment d12 500/1000 l
												Info - Pump*
												e.g.: BT4b 1000 PPE 300UA000000

* Please enter the identity code of the selected pump.

2 Safety Chapter

Identification of safety notes

The following signal words are used in these operating instructions to denote different severities of danger:

Signal word	Meaning
WARNING	Denotes a possibly dangerous situation. If this is disregarded, you are in a life-threatening situation and this can result in serious injuries.
CAUTION	Denotes a possibly dangerous situation. If this is disregarded, it could result in slight or minor injuries or material damage.

Warning signs denoting different types of danger

The following warning signs are used in these operating instructions to denote different types of danger:

Warning signs	Type of danger
	Warning – automatic start-up.
	Warning – hand injuries.
	Warning – high-voltage.
	Warning – danger zone.

Safety notes

CAUTION!

Observe the operating instructions of the metering pump.

CAUTION!

Chemicals can spray out of the tank opening

When mixing, chemicals can spray out of the container opening.

- Only use the stirrer when the tank is closed.
- Always keep the tank closed with a lid and lock.
  35 litre storage tank: not lock available or required.

CAUTION!

Caution, prevent material damage

In the event that just one component of the metering station that comes into contact with the feed chemical is not compatible with it, material damage may occur.

– Take into account the resistance of the material of all components coming into contact with the feed chemical when selecting it. Also make use of the ProMinent® resistance list in the product catalogue or at *www.prominent.com*.

Only with electric stirrer:

WARNING!

Warning of severe injury to hands

The rotating propeller of the electric stirrer and the stirrer shaft can cause severe injury to hands.

– Never reach into the metering tank when the electric stirrer is running.
– Switch off the power supply to the stirrer and secure to prevent switching back on before opening the cover of the metering tank.

CAUTION!

The agitator shaft may be knocked

When the level in the metering tank is too low, turbulences may result when agitating. That may cause knocking against the agitator shaft.

– Before switching on the electric agitator, fill the metering tank with metering solution at least 20 cm above the propeller.

CAUTION!

Observe the "Stirrer operating instructions"

Correct and proper use

- ProMinent® DSBa metering stations may be used only to store liquid metering chemicals and for metering into hydraulic systems.
- Any other uses or modifications are prohibited.
- ProMinent® DSBa metering stations are not designed to store and meter gaseous or solid media.
- ProMinent® DSBa metering stations are not intended for unprotected outside use.
- ProMinent® DSBa metering stations are not intended for use in EX zones.
- ProMinent® DSBa metering stations are not intended for use with flammable media.

3 Storage and transport

Safety instructions

CAUTION!

Danger of material damage

A fully mounted metering station may be damaged when transporting.

- Only transport the metering station once the following components have been dismantled:
  - Metering pump
  - Electric agitator (option)
  - Discharge tap (option)
  - Metering equipment (option)

CAUTION!

The agitator shaft may be knocked

The agitator shaft can be knocked if transportation is carried out incorrectly.

- Only transport the agitator shaft in a professional manner.

Storage and transport temperatures

Data	Value	Unit
Storage and transport temperature of the metering station	0 ... 50	°C

4 Overview of equipment

Modules which can be combined to produce a metering station:

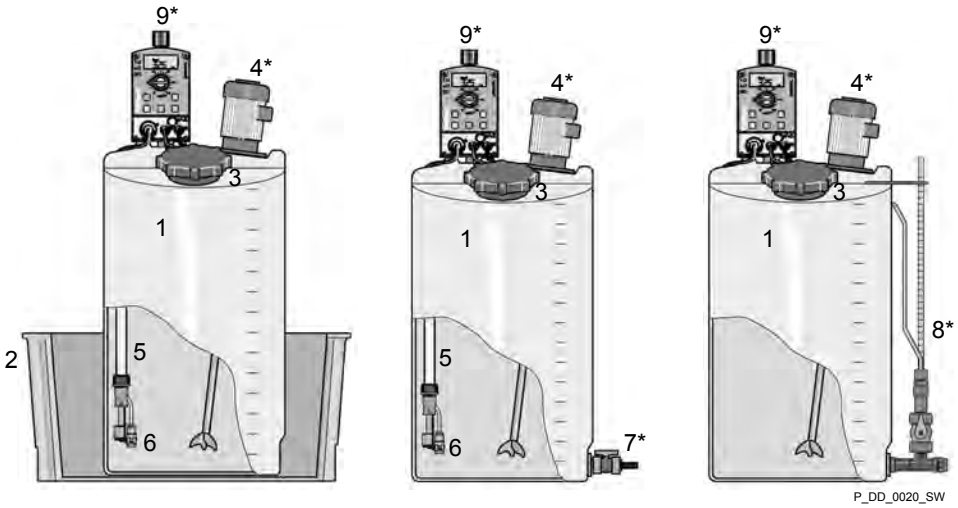

Fig. 2: Metering station with bund, discharge tap or metering equipment

1 PE metering tank
2 Bund, stackable
3 Lock for tank screw top
4 Electric agitator* / hand mixer / hand agitator
5 Suction assembly
6 Float switch for suction assembly
7 Discharge tap for tank *
8 Metering equipment *
9 Metering pump*, in accordance with order

* ProMinent prepares these components for installation at a later date. To prevent damage occurring in transit they are packed separately and included with the delivery. The customer carries out all on-site installation tasks.

5 Mounting and hydraulic installation

5.1 Notes

CAUTION!
Secure the metering stations so that under no circumstances can they tip over or "move off" due to an out-of-balance stirrer.

– *Screws and nuts used for attaching the metering pump, electric stirrer or metering equipment are already screwed into the positions in which they should be used when these units are attached.*
The diagrams in the chapter "Overview of equipment" should assist you in carrying out these tasks.
– *A suction assembly or a hand mixer will be supplied pre-assembled (if included in the scope of supply).*

5.2 Operating instructions

The customer will need to mount or install the following units depending on the scope of supply:

Drain tap

1. Remove the blue sealing stopper, below, from the plastic connector
2. Remove the adhesive strip above the O-ring on the drain tap.
3. Screw the drain tap tightly to the plastic connector.

Metering equipment

CAUTION!
Feed chemical may leak out
Feed chemical can leak from the suction hose of the metering equipment.

– Connect the suction hose before filling the metering tank.

1. Screw the tube retaining bracket (a plate) for the metering equipment to the top of the metering tank using the nylon screws.
2. Remove the adhesive strip above the O-ring on the metering equipment.
3. Push the metering cylinder for the metering equipment partly through the tube retaining bracket and screw the metering equipment tightly to the plastic connector below.
4. Cut the suction hose to length.
5. Connect the suction hose to the liquid end with the connector kit.

Metering pump

1. Cut the suction hose to length.
2. Feed the level sensor cable (if included in the scope of supply) underneath the metering pump.
3. Unscrew the attachment screws for the metering pump from their holes in the metering tank.
4. Attach the metering pump using these screws (washers, ...).
5. Connect the suction hose to the liquid end with the connector kit.
6. Insert the level sensor cable into the "level switch" terminal ⊘ of the metering pump.

Electric stirrer

CAUTION!

The stirrer shaft may be knocked

The stirrer shaft can be knocked if handling is carried out incorrectly.

– Only handle the stirrer shaft in a professional manner.

For metering tanks from 100 l:

1. Unscrew the 4 nuts, clamp rings and washers from the threaded rods on the metering tank.
2. Position the electric stirrer on the metering tank - flange seal! Position of the terminal box! - and secure.

For 60 l metering tanks:

1. Place the flange seal over the small hole for the stirrer shaft on the top of the tank.
2. Insert the stirrer shaft from the inside through this small hole and through the flange seal.
3. Partly unscrew the grub screw at the end of the stirrer motor shaft.
4. Push the shaft of the stirrer motor over the stirrer shaft so that the drill hole in the stirrer shaft is positioned below the grub screw.
5. Tighten the grub screw (2.5 mm hex. socket).
6. Attach the stirrer motor to the metering tank with the fittings provided in the accompanying bag - do not forget the washers and clamp rings! Position of the terminal box!

Leak test

1. Prior to filling the metering tank check that:
   - The suction line is connected
   - The shut-off valve is completely closed
   - The screw cap on the bottom of the metering equipment is tightly closed
2. Then fill the metering tank, e.g. with water and check for leaks.

6 Installation, electrical

WARNING!

Warning against electric shocks

Electric shocks may result from incorrect installations.

- Electrical installation of electrical units must be carried out by an electrical technician.
- Connect the PE conductors of the electrical components.
- An electric stirrer must be fitted with a motor protection switch.
- Carry out electrical installation of the metering pump in accordance with the operating instructions.

WARNING!

Unexpected start-up is possible

As soon as the metering station is connected to the mains, it is possible that the metering pump and, where fitted, the stirrer will start to operate.

- Install an emergency cut-off switch in the power supply line or
- Integrate the metering station in the safety concept of the overall system and inform personnel about electrical isolating options.

7 Start up

Safety notes

CAUTION!
Observe the operating instructions of the metering pump!

CAUTION!
Chemicals can spray out of the tank opening
When mixing, chemicals can spray out of the container opening.

- Only use the stirrer when the tank is closed.
- Always keep the tank closed with a lid and lock.
  35 litre storage tank: not lock available or required.

The point at the top of the suction assembly where the suction line and the level sensor cable exit must not be blocked or sealed!

Air must be allowed to enter the metering tank here to equalise the pressure!

Only with electric stirrer:

WARNING!
Warning of severe injury to hands
The rotating propeller of the electric stirrer and the stirrer shaft can cause severe injury to hands.

- Never reach into the metering tank when the electric stirrer is running.
- Switch off the power supply to the stirrer and secure to prevent switching back on before opening the cover of the metering tank.

WARNING!
Danger of electric shock
A mains voltage may exist inside the stirrer motor housing.

- If the stirrer motor housing has been damaged, you must disconnect it from the mains immediately. It may only be returned to service after an authorised repair.

CAUTION!

The agitator shaft may be knocked

When the level in the metering tank is too low, turbulences may result when agitating. That may cause knocking against the agitator shaft.

– Before switching on the electric agitator, fill the metering tank with metering solution at least 20 cm above the propeller.

Observe the limitations due to the feed chemical being used

Temperature

Feed chemical temperature, max.	30	°C

Density

Feed chemical density, max.	1.4	g/cm³

Viscosity

The allowable viscosity of the feed chemical forms an upper limit above which the following units cannot be used:

Unit	Maximum viscosity
Metering pump	200 mPas
Metering pump with valve springs	500 mPas
Electric stirrer	500 mPas

Determine the capacity using the metering equipment (option)

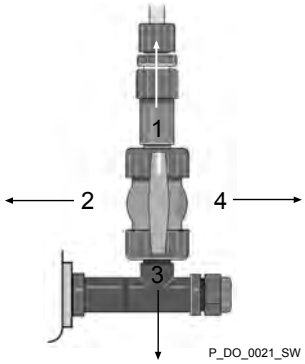

Fig. 3: Position of the ball valve

1 Normal position "Metering" or "Fill the metering cylinder"
2 When calibrating "Block the tank feed" (measurement)
3 same as 1
4 "Block the suction line feed"

The metering equipment enables you to determine the capacity of the metering pump:

Materials required:

- Stop watch
- Pocket calculator

1. For filling the metering cylinder, turn the ball valve to position 1.
   ⇨ It will fill to the current liquid level of the metering tank - the higher the better.
2. Turn the ball valve to position 2.
   ⇨ The metering cylinder is now separated from the tank and only connected only to the suction line.
3. Note the liquid level of the metering cylinder and the back pressure of the metering pump.
4. Start the metering pump and a stopwatch at the same time.
5. Stop the metering pump and the stopwatch at the same time, after a set time or shortly before the metering cylinder is empty.
6. Read off the liquid level in the metering cylinder.

Each scale marking is 0.5 cm^3 or 1 cm^3 depending on the version.

7. Subtract the liquid levels from one another and divide by the time recorded.
8. Enter this capacity together with the back pressure into the log book.
9. Turn the ball valve back to position 1.

Position 4 on the ball valve closes the feed to the suction line. In this position, e.g. it is possible to exchange the suction line when the metering tank is full.

8 Maintenance, repair and disposal

Maintenance and repair

WARNING!
Before working on the storage tank, disconnect the stirrer from the power supply and secure to prevent switching back on.

CAUTION!
Observe the operating instructions of the metering pump and, when necessary, the electric stirrer.

CAUTION!
Deposits adhering to the propeller can cause an imbalance.

Regularly remove any adhering deposits from the propeller.

Disposal

CAUTION!
Note the respective regulations currently applicable in your country!

CAUTION!
Observe the operating instructions of the metering pump.

9 Technical data

You will find the technical data for the metering pump and, when necessary, the electric agitator in the product specific operating instructions.

9.1 Dimensions and Weights

Metering tanks

Capacity	Diameter		Height	Net weight
l	mm		mm	kg
35	350	-	485	3.5
60	410	-	590	5
100	500	-	760	7
140	500	-	860	9.5
250	650	-	1100	17.5
500	820	-	1190	24.5
1000	1070	-	1260	51

Bund

Capacity	Diameter d	Diameter D	Height	Net weight
l	mm	mm	mm	kg
35	565	507	220	2.9
60	680	607	270	4.5
100	802	727	320	6.5
140	811	727	370	7.3
250	917	807	520	11.3
500	1155	1009	670	16.5
1000	1280	1200	900	34.0

9.2 Materials, wetted

Metering station

Module	Material
Metering tanks	PE
Bund	PE
Suction assembly (according to Identcode)	PP / EPDM or PVC / PP / FPM
Suction assembly Suction hose	PE
Discharge tap (according to Identcode)	PP / EPDM or PVC / FPM
Metering equipment	PVC / NP / EPDM / FPM

Module	Material
Metering equipment Suction hose	PVC, flexible
Metering pump	see the product-specific operating instructions
Hand mixer	PP
Electric agitator (according to Identcode)	↳ *‘Electric agitator (according to Identcode)’ on page 20*

Electric agitator (according to Identcode)

PVDF

Components	Tank size	
	60 l ... 500 l	1,000 l
Stirrer shaft	PVDF	PVDF
Propeller	PP	PVDF
Flat seal	FPM	-

Stainless steel 1.4571

Components	Tank size	
	60 l ... 500 l	1,000 l
Stirrer shaft	1,4571	1,4571
Propeller	PP	PVDF
Flat seal	FPM	-

10 Declaration of Conformity

- Original -

EC Declaration of Conformity for Machinery

We,

ProMinent Dosiertechnik GmbH
Im Schuhmachergewann 5 - 11
D - 69123 Heidelberg, Germany

hereby declare that the product identified below conforms to the basic health and safety requirements of the EC Directive, by virtue of its design and construction, and in the configuration placed on the market by us.
This declaration is no longer applicable if changes are made to the product without our authorisation.

Product description:	***Dosing station container***
Product type:	***DSBa...***
Serial no.:	***see type plate on the unit***
Applicable EC Directives:	***EC Machinery Directive (2006/42/EC)*** ***EC EMC Directive (2004/108/EC)*** ***The safety objectives of the Low Voltage Directive 2006/95/EC were complied with in accordance with Appendix 1, No. 1.5.1 of the Machinery Directive 2006/42/EC***
Applied harmonised standards, especially:	***EN ISO 12100, EN 809***
Technical documentation was compiled by the authorised representative for documentation:	***Dr. Johannes Hartfiel*** ***Im Schuhmachergewann 5-11*** ***D - 69123 Heidelberg***
Date / Manufacturer signature:	*01.03.2012*
Name / position of the signatory:	*Joachim Schall, Manager Innovation and Technology*